SOLA HD

Battery Module

SDU 24-BAT

Instruction Manual

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1.0 Important Safety Instructions

This manual contains important safety instructions. Read all safety, installation, and operating instructions before operating the Uninterruptible Power System (UPS). Adhere to all warnings on the unit and in this manual and follow all operating and user instructions.

This equipment is designed for Industrial or Commercial use and can be installed and operated by individuals without previous training.

⚠ WARNING **Observe all cautions and warnings in this manual. Failure to do so may result in serious injury or death. Refer all UPS and battery service to qualified service personnel. Do not attempt to service this product yourself and never work alone.**

⚠ WARNING **Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from the batteries. Proper disposal of batteries is required. Refer to your local laws and regulations for disposal requirements.**

⚠ CAUTION **Do not dispose of batteries in a fire; they may explode. Do not open or mutilate the battery. Released electrolyte is harmful to skin and eyes and may be toxic. For battery recycling information, contact CSB recycling network at: 1-800-738-7372.**

⚠ CAUTION **Always disconnect this external battery module from the SDU power module before replacing the batteries.**

2.0 Warnings Defined

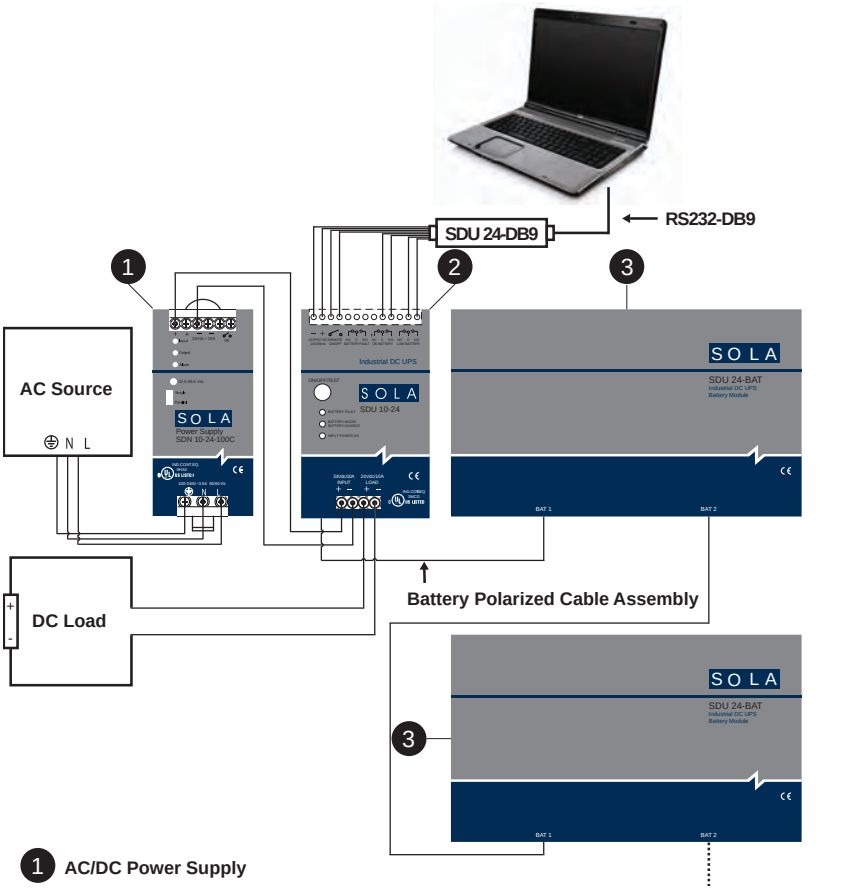
⚠ DANGER **Danger:** Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

⚠ WARNING **Warning:** Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

⚠ CAUTION **Caution:** Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

3.0 Wiring Diagram

3.1 SDU DC UPS with SDU 24-BAT Battery Module



4.0 Replacing the Battery

4.1 Limitation of Liability

SolaHD assumes no liability for incidental or consequential loss or damage due to the third-party servicing or placement of batteries in SolaHD products, including but not limited to, liability for injury, loss of life, property damage, loss of use, loss of data, loss of time, inconvenience or commercial loss, or breach of implied or expressed warranties. Any and all such liability is expressly excluded. In no event shall SolaHD be responsible for any amount. If SolaHD determines that any third-party service work has been performed improperly or in a manner inconsistent with SolaHD workmanship criteria, all existing warranties in effect for that product will become null and void.

4.2 Replacement Batteries

The following battery types can be used as a replacement:

Manufacturer	Type	Rating
CSB	HR1221W	12 V dc, 5.0 Ah
	HR1221WF2	
B & B Battery (USA) Inc.	BP 5-12	
	HR 5.5-12	
Kung Long Batteries Industrial Co. Ltd.	WP1221W	
	WP5-12	
Taiwan Yuasa Battery Co. Ltd.	NP5-12 FR	
	NPH5-12	
Japan Storage Battery	PE12V5	
Toplite	NP5-12	

4.3 Replacement Fuses

The following fuse types can be used as a replacement:

Manufacturer	Type	Rating
Littelfuse Inc.	25730	32 V dc, 30 A
Possing Electric Co. Ltd.	ATP30	
Cooper Industries Inc., Bussman Div.	ATC30	

4.4 Battery Replacement Instructions

⚠ CAUTION

When removing and installing the new batteries, extreme care must be used not to short the metal chassis parts across the battery terminals and not to short the batteries to each other. Personal injury may result.

⚠ CAUTION

The battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries:

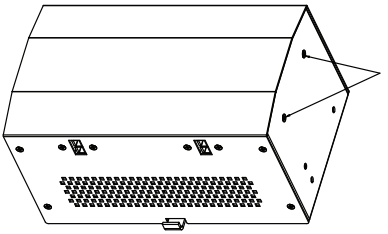
- **Remove watches, rings, and other metal objects.**
- **Use tools with insulated handles.**
- **Do not lay tools or other metal objects on top of the batteries.**
- **If the battery replacement kit is damaged in any way or shows signs of leakage, contact your SolaHD representative immediately.**
- **Do not dispose of batteries in a fire; they may explode.**
- **Dispose of old batteries according to local codes.**

⚠ CAUTION

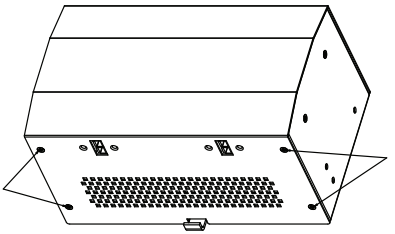
Electrical safety precautions must be followed when installing or servicing this equipment. To prevent risk of electrical shock, turn off and lock out all power sources to the unit before making electrical connections or servicing.

NOTE: Caution should be exercised when replacing the batteries. The load is unprotected from disturbances and power outages during this procedure.

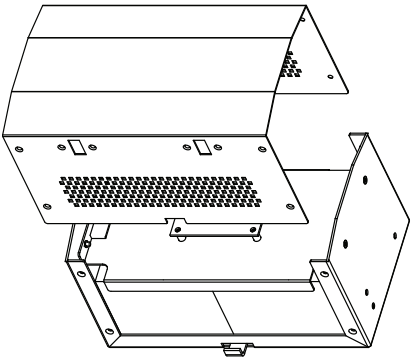
1. Remove four screws from the right and left sides of the enclosure.



2. Remove eight screws from the top and bottom sides of the enclosure.



3. Carefully slide the front cover forward and off the enclosure. Do not disconnect the wires from the polarized terminals.

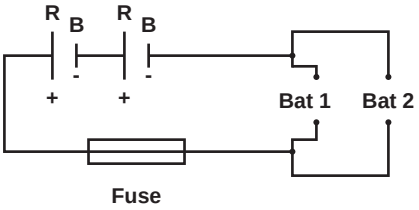


4. Remove the wires from the battery posts.

5. Remove the failed battery/batteries. Insert the new battery/batteries.

CAUTION
PbH2SO4
Risk of explosion if battery is replaced by incorrect type.
Dispose of used batteries according to instructions.

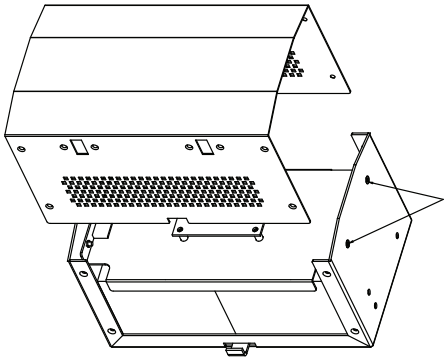
6. Use the following connection diagram to ensure a proper connection to the fuse protection board and polarized terminals.



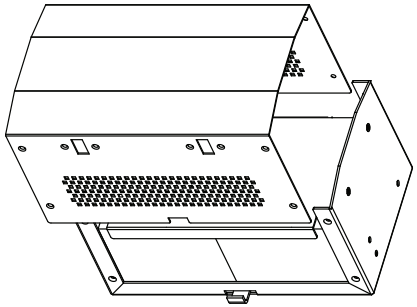
Bat 1 = Polarized terminal 1
Bat 2 = Polarized terminal 2
R = Red terminal
B = Black terminal

7. Slide the battery/batteries into their respective positions.

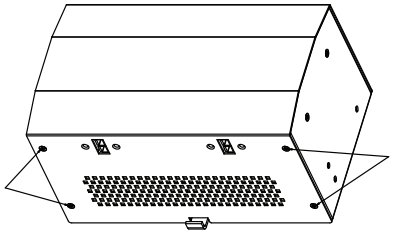
8. Using four screws, secure the protection fuse board.



9. Slide the front cover onto the enclosure.



10. Secure the assembly with eight screws.



5.0 Battery Backup Times (in minutes vs. load percentage)

NOTE: Resistive loads were used to measure the battery run times. Using other types of loads may result in different battery run times.

5.1 SDU 10-24 with SDU 24-BAT

Load	20% (2 A)	40% (4 A)	60% (6 A)	80% (8 A)	100% (10 A)
1 unit	113	45	30	21	14
2 units	247	114	74	48	38
3 units	396	178	117	80	58
4 units	531	233	148	111	81

5.2 SDU 20-24 with SDU 24-BAT

Load	20% (4 A)	40% (8 A)	60% (12 A)	80% (16 A)	100% (20 A)
1 unit	46	21	10	06	04
2 units	116	50	28	17	10
3 units	178	80	46	31	20
4 units	237	113	65	43	31

6.0 Specifications

Parameter	SDU 24-BAT
Nominal Voltage	24 V dc
Protection	Fuse: 30 A
Charging Current	0.5 A
Enclosure Dimensions, in. (mm)	4.88 x 8.27 x 4.55 (124 x 210 x 116)
Enclosure Type	IP20
Terminal Connector Type	Polarized powerpole connectors
Operating Temperature	-20°C to +50°C
Charge Temperature	0°C to +40°C
Storage Temperature	-20°C to +40°C
Humidity	95%, non-condensing
Weight	12 lb.
Mounting	Simple snap-on system for DIN rail TS35/7.5 or TS35/15 chassis-mounted; optional screw mounting set SDU-PMBRK
Accessories	1 ft. polarized battery cable
Safety Standard for SDU DC UPS System*	UL60950-1, IEC 60950-1, UL508, CE CAN/CSA C22.2 No 107-1-01, CAN/CSA C22.2 No 60950-1

*The SDU DC UPS system includes a power module (SDU 10-24 or SDU 20-24) and a battery module (SDU 24-BAT or SDU 24-BATEM).

7.0 Product Registration & Warranty Information

7.1 Product Registration

To register your product for updates and information on service and support:

- Visit the Technical Support section of our Web site at: http://www.solahd.com/support/registration.htm
- Click on the Product Registration link and fill in the form. This will register your product with SolaHD.

7.2 Warranty Information

Please see “Terms & Conditions of Sale”.